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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,724	02/08/2002	Arun Chandra Kundu	10416-19	3220

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EXAMINER

GLENN, KIMBERLY E

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 10/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,724

Applicant(s)

KUNDU, ARUN CHANDRA

Examiner

Kimberly E Glenn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 21, 24, 28, 29, 32 and 33 is/are rejected.
- 7) ☒ Claim(s) 2, 5-17, 19 22 23 25-27 30-32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 18, 20, 21, 24, 28, 29, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Shen US Patent 5,750,473.

Shen discloses a dual mode 2-pole filter. FIG. 4(a) shows the front side, in which the high temperature superconductor cut-corner square resonator 42 having a cut-corner 43 is deposited on the front side of substrate 40. As shown in FIG. 4(c), a cross sectional view of the filter, the backside of substrate 40 is coated with high temperature superconductor film 41, which serves as the ground plane of the resonator. The backside coupling circuits are shown in FIG. 4(b) and comprise two branched high temperature superconductor transmission lines. The coupling circuits include: input and output center lines 45 and 45a; discontinuities 44 and 44a in the film 41 of the ground plane, and extended branch center lines 46 and 46a, as seen in FIG. 4(b). All coupling circuits are in the coplanar line configuration. The superconductor film extends to all edge of the bottom surface of the substrate. The output line 45 extends to one edge of the bottom surface of the substrate and the output line 45a extends to another edge of the bottom surface of the substrate. There are two modes in the dual mode resonator 42: one with horizontal radio frequency current, the other with vertical current. The intersectional coupling in this particular case is provided by the cut-corner 43. The dashed lines in FIG. 4(b) indicate the location of a projection of the outer edge of resonator 42 and the cut-corner 43. The substrate materials can be

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any dielectric material with close lattice match to the high temperature superconductor thin film deposited thereon and having a loss tangent of less than 0.0001. The substrate materials are commonly selected from LaAlO_3 , MgO , LiNbO_3 , sapphire or quartz. The high temperature superconductor thin film materials useful in the practice of this invention can include any superconductor with a T_c greater than 77.degree. K. Preferably the material is selected from $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$, $\text{Tl}_2\text{Ba}_2\text{CaCu}_2\text{O}_8$, $\text{TlBa}_{1-x}\text{Ca}_{x-1}\text{Cu}_3\text{O}_9$, $(\text{TlPb})\text{Sr}_2\text{CaCu}_2\text{O}_7$ and $(\text{TlPb})\text{Sr}_2\text{Ca}_{1-x}\text{Cu}_{1+x}\text{O}_9$. Figures 1a and 2a show that the substrate can have a rectangular (or square) shape. The sides of the substrate are left opened. (Figures 4a through 4c and column 7, lines 1-29)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shen US Patent 5,750,473 in view of Konishi et al US Patent 4,963,844.

The primary reference, Shen teaches a dual mode 2-pole filter. FIG. 4(a) shows the front side, in which the high temperature superconductor cut-corner square resonator 42 having a cut-corner 43 is deposited on the front side of substrate 40. As shown in FIG. 4(c), a cross sectional view of the filter, the backside of substrate 40 is coated with high temperature superconductor film 41, which serves as the ground plane of the resonator.

Thus, Shen is shown to teach all the limitations of the claim with the exception of the first exciting electrode being formed on the first side of the dielectric block,

Konishi et al teaches that is well known in the art for excitation electrodes 18 to be formed on the side surfaces of a dielectric block. (Figure 1 and column 5 lines 19-42)

One skilled in the art, at the time of the invention, would have found it obvious to provide the exciting electrodes on the side of the dielectric block as taught by Konishi et al. The motivation/ suggestion for this modification would be provide alternative connection position.

Allowable Subject Matter

Claims 5-17, 19, 22-27, 30-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With regards to claims 5-12 and 30, the prior art of record does not disclose the providing means being achieved by removing portion exposing a part of the bottom surface of the dielectric block. With regards to claims 13-17 and 31, the prior art of record does not disclose the providing means being achieved by a coupling stub formed on bottom surface of the dielectric block and physically connected to the second metal plate. With regards to claim 19, the prior art of record does not disclose the first exciting electrode being in further contact with the first edge and the second exciting electrode being in further contact with the second edge. With regards to claims 22 and 23, the prior art of record does not disclose or fairly teach the first and second exciting electrodes, which are disposed in the sided of the dielectric block, are prevented from contacting

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the second metal plate. With regards to claims 25-27 and 32, the prior art of record does not disclose the providing means being achieved by removing corner of the dielectric block.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Kanaba et al US Patent 6,563,403 "Dual mode band pass filter",
- Kanaba et al US Patent 6,556,109 "Dual mode band pass filter" and
- Fiedziuszko et al US Patent 5,136,268 "Miniature dual mode planar filters".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimberly E Glenn whose telephone number is (703) 306-5942.

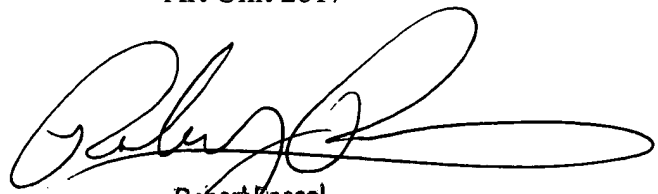
The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (703) 308-4909. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Kimberly E Glenn
Examiner
Art Unit 2817

keg



Robert Pascal
Supervisory Patent Examiner
Technology Center 2800